

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant: Stephen Mark KEATING et al.

U.S. Serial No.: Filed Concurrently Herewith

Title of Invention: METHOD AND APPARATUS FOR EMBEDDING  
DATA AND FOR DETECTING AND RECOVERING  
EMBEDDED DATA

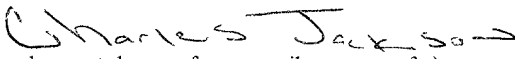
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**PRELIMINARY AMENDMENT**

U.S. Patent and Trademark Office  
Box Patent Application  
P.O. Box 2327, Arlington, VA 22202

Sir:

Before the issuance of the first Office Action, please amend the above-identified application as follows:

**IN THE CLAIMS:**

Amend claim 64 to read as follows:

64. (Amended) A system for embedding and removing data from information material, said system comprising

an apparatus for embedding the data into the information material comprising:

an error correction encoder operable to encode each of said data items in accordance with a systematic error correction code to produce encoded data items each comprising the source data item and redundant data, and

a combining processor operable to combine said encoded data items with said information material; and

an apparatus for detecting and removing the data from the information material comprising

an embedded data detector operable to detect and generate a recovered version of said encoded data from said information material

an error processor operable, for each of said recovered encoded data items, to determine whether said recovered encoded data item is deemed too errored, and if not, decoding said encoded data item to generate a recovered version of said data item,

a data store for storing said recovered version of said data item, and

a recovery data processor operable, if said error processor determines that one of said recovered encoded data items is deemed too errored, to compare the source data item of said encoded data item, with at least one other source data item from said data store, and to estimate said source data item of said errored encoded data item in dependence upon a corresponding value of said at least one other recovered data item.


### **REMARKS**

Claims 1-77 remain in the application. Claim 64 has been amended to remove multiple dependency. Attached hereto is a marked up version of the change made to claim 64. The

attached page is captioned **"Version with markings to show changes made."** The filing fee has been calculated based upon this amendment to the claim.

Respectfully submitted,

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FILED

**VERSION WITH MARKINGS TO SHOW CHANGES MADE****In the claims:**

64. (Amended) A system for embedding and removing data from information material, said system comprising

an apparatus for embedding the data into the information material ~~according to Claim 61,~~  
~~and comprising:~~

an error correction encoder operable to encode each of said data items in  
accordance with a systematic error correction code to produce encoded data items each  
comprising the source data item and redundant data, and

a combining processor operable to combine said encoded data items with said  
information material; and

an apparatus for detecting and removing the data from the information material ~~according~~  
~~to Claim 44 comprising~~

an embedded data detector operable to detect and generate a recovered version of  
said encoded data from said information material

an error processor operable, for each of said recovered encoded data items, to  
determine whether said recovered encoded data item is deemed too errored, and if not,  
decoding said encoded data item to generate a recovered version of said data item,

a data store for storing said recovered version of said data item, and

a recovery data processor operable, if said error processor determines that one of  
said recovered encoded data items is deemed too errored, to compare the source data item  
of said encoded data item, with at least one other source data item from said data store,

and to estimate said source data item of said errored encoded data item in dependence upon a corresponding value of said at least one other recovered data item.

TO BE RECOVERED